HWG | HARRIS, WILTSHIRE & GRANNIS LLP

February 25, 2019

Ex Parte

Marlene Dortch, Secretary
Federal Communications Commission
445 12th Street SW
Washington, DC 20554

Re: *Expanding Flexible Use in Mid-Band Spectrum between 3.7 and 24 GHz*,
GN Docket No. 17-183

Dear Ms. Dortch:

On February 21, 2019, Maria Kirby of Apple Inc., Chris Szymanski of Broadcom Inc., Mary Brown of Cisco Systems, Inc., Tom Navin of Facebook, Inc., Megan Stull of Google LLC, Paula Boyd of Microsoft Corporation, John Kuzin of Qualcomm Incorporated and I met with Commissioner Starks and his Legal Advisor William Davenport. We discussed the Commission's Notice of Proposed Rulemaking in the above-referenced docket proposing to open the 6 GHz band for unlicensed technologies. Specifically, we expressed support for the NPRM's framework, its recognition of the need for additional unlicensed frequencies, and the importance of FCC rules implementing a framework that would support the use of standard-power using AFC in U-NII-5, U-NII-7 and the bottom 100 MHz of U-NII-8 and lower-power devices in all four sub-bands.

In addition, Mr. Szymanski, Ms. Brown, Mr. Navin, Mr. Kuzin, Tevik Yucek of Qualcomm Incorporated (by telephone), and I met with Julius Knapp, Ira Keltz, Jamison Prime, Michael Ha, Aspasia Paroutsas, Nicholas Oros, Paul Murray, and Barbara Pavon (by telephone), all of the Office of Engineering and Technology. We discussed progress in Europe on opening the 6 GHz band to unlicensed technologies, using the attached presentation.

Pursuant to the FCC's rules, I have filed a copy of this notice electronically in the above referenced docket. If you require any additional information, please contact the undersigned.

Sincerely,

Paul Margie
Counsel to Apple Inc., Broadcom Inc., Cisco Systems, Inc., Facebook, Inc., Google LLC, and Microsoft Corporation

Enclosures
cc: meeting participants

ATTACHMENT

6 GHz: Continued European Progress

February 21, 2019

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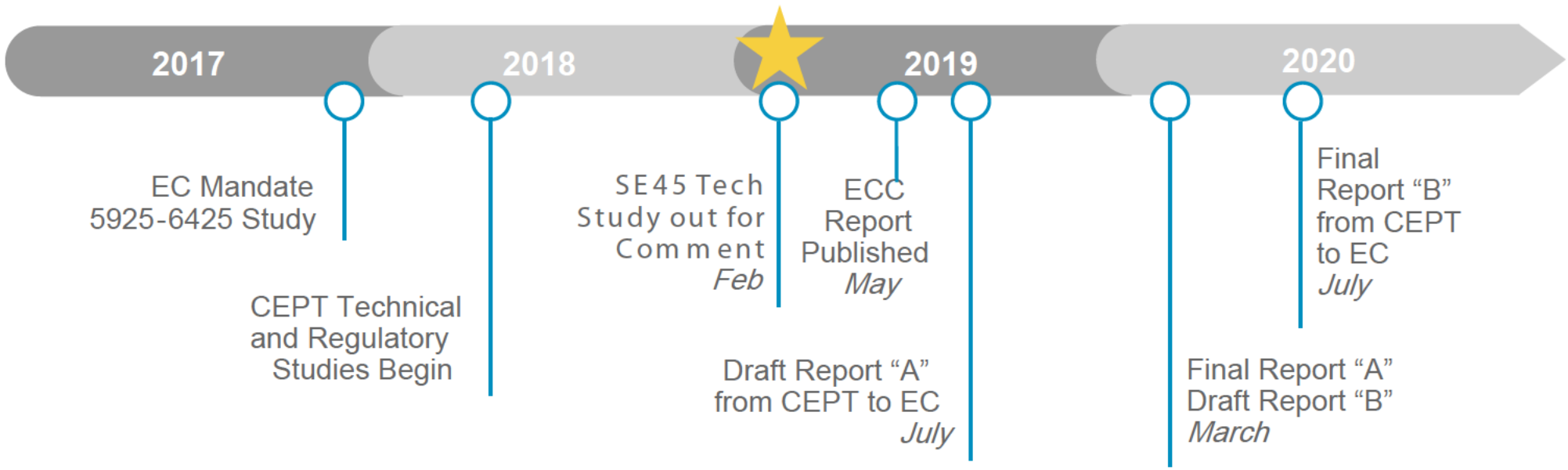
Projected 6 GHz EU Timeline

- EU timeline for RLAN designation well established based on EC Mandate to CEPT
- Draft SE45 Sharing and Compatibility Report and well established regulatory precedent in 5150 -5250 MHz pave the way for low power indoor RLAN operations without AFC (e.g., 23 -24 dBm e.i.r.p.)
- Higher power/outdoor operations is also being considered via frequency coordination



Draft 5925 -6425 Sharing and Compatibility Study Overview

- 189 page report, approved by WG SE for consultation, studied the compatibility of RLAN systems with incumbent systems in the 5925 - 6425 MHz and adjacent bands
- Meetings were well attended by FS, FSS, & ITS incumbents, RLAN industry, and various Administrations
- Agreed parameters/assumptions based on 2025 deployments
- Includes various MCL and Monte Carlo analyses to identify worst case interference and associated probabilities
- Analysis related to FS and FSS operations concluded that sharing is feasible under studied conditions
  - **FS:** Low power indoor operations and frequency coordination for standard power/outdoor RLAN operations is likely sufficient to enable sharing
  - **FSS:** Sharing is feasible when outdoor operations is limited to less than 5% of total RLAN use

Sharing Between RLAN and FS: Summary Conclusions

- Three Studies (A, B, and C) were performed to determine RLAN compatibility with FS
  - **Study A** is an MCL Analysis that identified the most critical sharing scenarios, and provided a sensitivity analysis on various RLAN deployment assumptions
  - **Studies B** and **C** evaluated the probability of the critical scenarios identified in study A via statistical Monte-Carlo Analysis

Sharing Between RLAN and FSS: Summary Conclusions

- Two studies (A & B), assuming representative set of FSS satellites, assessed aggregate interference from RLAN into FSS receivers in space
  - **Study A:** a Monte-Carlo analysis using the "Mid scenario" and found FSS satellites had 8.5 dB more margin than the -10 dB I/N protection criterion (even when including population in Africa and Europe
  - **Study B:** a statistical analysis based on "Low, Mid and High scenarios," included a 3 dB apportionment for FS, and found sharing was feasible using the agreed values in the report

Thank You